Universiteit van Amsterdam

Graduate School of Communication

Emerging Tech in Communication Science
Course Handbook
Spring 2020

UPDATED
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Course Instructor:
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Course Co-Instructor:
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Course Meeting:
Tuesdays 11:00– 13:00, REC-C3.02
Thursdays 13:00 – 15:00, REC-C2.02

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COURSE DESCRIPTION

Our lives are undeniably influenced by the digital sphere. We watch television on-demand, ask Siri about the weather, and share news on Twitter. When we game, we twitch. We interact with chatbots when gathering health information, we rely on wearables to quantify our lives. But this is just the beginning. Emerging technology is changing how we play, work, and interact in ways that we are only beginning to understand. Social robots. Artificial intelligence. Internet of things. Virtual reality. And more. Today's technological transformations are among the greatest societal shifts of modern times, and if we hope to be resilient to these transformations, we must (1) understand these transformations, and (2) develop paradigms and policies to ensure these transformations benefit society. With this in mind, this class takes an in-depth look at select emerging tech by studying literature from a range of perspectives (e.g., theoretical, societal, ethical) and by engaging in hands-on development of these tech (e.g., social robot programming; developing virtual agents). We then move from this in-depth focus to a broader understanding of the field. Students will leave this course able to think thoughtfully about current emerging tech along with concrete skills necessary to contribute to its development.

COURSE GOALS

Upon completion of this course, students should…:

1. Understand the current trends of emerging technology in daily life.

2. Be introduced to the skills necessary to create prototypes of emerging technology.

3. Be able to apply communication theory to the design of emerging technology (theory-driven decisions).

4. Be able to reflect on the ethics (inclusive design; user rights, machine rights) associated with the design and implementation of emerging technology.

5. Acknowledge limitations of emerging technology as well as reflect on future perspectives.

STUDY LOAD

This master's elective seminar involves 6 ECTS.

COURSE MATERIALS

All readings are available for download online using the UvA Digital Library or Google Scholar. If not available online, the materials will be made available on the course Canvas page. A list of the assigned readings, along with their associated course dates, is included in this course handbook.

COURSE POLICIES

Attendance

Students are expected to attend <u>all</u> classes, be prepared to discuss assigned readings, and participate fully in class activities. Attendance will be considered in the determination of overall achievement of class learning objectives. A maximum of two sessions may be missed (note: one week consists of two sessions!). Students are always expected to excuse themselves in advance via an email to the course teaching assistant *prior* to lesson start. If more than two sessions are missed – for whatever reason – the student will be expelled from the seminar. When missing a meeting, students are still expected to submit all assignments on time.

Class Lateness Policy: Students are expected to arrive at class on time. Being late twice will be considered as one nonattendance. *Please note*: After the lecture begins, the classroom door will be closed. Students must wait until the lecture break to enter the room. Lateness will be considered in the determination of overall achievement of class learning objectives.

Class Participation & Expectations

Classroom learning is a group activity that depends upon everyone's full participation in order to succeed. Students are expected to: Be prepared to begin class on time, silence cell phones and refrain from texting during class, read and be prepared to discuss assigned readings, submit assignments on time, and participate fully in class activities.

Electronic Communication

The course Canvas page will be used for all course information. Primary means of communication outside of regular class hours is email. Instructor hours for in-person meeting are also scheduled and communicated each semester.

> ***Note about communication with instructor***: Students are provided with ample opportunity to ask questions during class. However, for additional questions, students may email the course instructor AND course teaching assistant using the Canvas email box. Students should expect a minimum of 24 hours response time during normal business hours. Urgent emails should be indicated as such in the subject line.

Readings and Assignments Submission

All assignments and due dates are clearly indicated on Canvas. Students should familiarize themselves with the assignment descriptions and deadlines. Late assignments are not accepted. For extensions, the student should first consult the study advisor. The study advisor will follow-up with the course instructor if an extension is warranted.

UvA Policy on Academic Integrity

Evidence of fraud or plagiarism will be taken seriously. UvA defines the following as examples of fraud and plagiarism: copying someone else's answers during examinations (cheating), cutting and pasting text from another source and presenting it as if it were your own work, or using someone else's text without proper acknowledgement of the source. UvA students are required to follow standard academic practices regarding citation and referencing. Students are expected to be familiar with the UvA's regulations governing fraud and plagiarism.

COURSE ABBREVIATED TIMETABLE

Students are expected to review and prepare *before all course meetings.* A detailed course schedule, include the complete reading list, is available on Canvas.

Date	Week	Topic	Lecturer
Tue., Feb. 4	Tuesday, 1a	Introduction	JTP & AB
Thu., Feb. 6	Thursday, 1b	Ethical Technology?	JTP
Tue., Feb. 11	Tuesday, 2a	Theoretical Perspectives	JTP
Thu., Feb. 13	Thursday, 2b	User-Centered Design	JTP
Tue., Feb. 18	Tuesday, 3a	Social Robots, Part A	JTP
Thu., Feb. 20	Thursday, 3b	Social Robots, Part B	AB
Tue., Feb. 25	Tuesday, 4a	Chatbots, Part A	JTP

Thu., Feb. 27	Thursday, 4b	Chatbots, Part B	AB
Tue., Mar. 3	Tuesday, 5a	Virtual Agents, Part A	JTP
Thu., Mar. 5	Thursday, 5b	Virtual Agents, Part B	AB
Tue., Mar. 10	Tuesday, 6a	Recommendation Engines	JTP
Thu., Mar. 12	Thursday, 6b	Final Project Q&A	AB
Tue., Mar. 17	Tuesday, 7a	Future Trends Socratic Seminar	JTP
Thu., Mar. 19	Thursday, 7b	Student Presentations	JTP & AB

COURSE GRADING

The final course grade is based on a percentage reflecting performance on:

Assignment	Type	Worth	Number	Total
Expert Reader Response	Individual	15%	4 responses	60%
Ethical Reflection	Individual	20%	1 reflection	20%
Design Brief & Pitch	Group	20%	1 brief + 1 pitch	20%

In addition, professional behavior is considered in the final course grade. Professional behavior includes attendance, active classroom engagement, completion of all assignments on-time, and active participation in group work. For students who complete the normal course requirements sufficiently, they will receive no points. However, not completing all tasks in a professional manner will result in a decreased final grade (up to -1/4) while behaviors that exceed typical professional behavior norms can result in an increased final grade (up to +1/4).

More information about each is available under Assignments.

ASSIGNMENT DETAILS
Assignment 1: Expert Reader Response (4 submissions, 15% each, individual)

Deadline: Monday, Week 3 / 4 / 5 / 6 by 17:00u on CANVAS

In weeks 3 through 6, each student will be required to read and respond to **one** of the selected readings. In doing so, each student in the class will serve as an "expert" on one of the readings per week. This expertise will be relied upon during the class discussion in the A-sessions. Students must provide a brief, clear, and coherent overview of each paper in which the core message, the flaws, and ethical implications. Specifically, each ERR will include:

Core sentence (1x), 1 sentence
- One selected sentence from the paper that represents the core thought of the paper.

Take-aways (2x), 1 sentence each
- Two take-aways, each formulated in once sentence. Based on the article, what are the take-aways that the authors want readers to remember?

Critique (1x), 300-500 words
- One critique
- Student should clearly explain what your critique is and why it is relevant.
- The critique should meaningfully relate to the course, as opposed to be only a general critique (e.g., sample size or correlational finding is quite general in nature)
- A reasonable way to address this shortcoming is provided.

Ethical Connection to Real-World (1x), approximately 500 words.
- What ethical thoughts / issues / concerns does this article bring to mind?
- Be sure to connect your ideas to the real-world, reflecting on both short and long-term implications.

ERR Formatting Sample

Name: Example Student
Student number: 12345678
Date: 24-09-2019

Article:
Van Oranje-Nassau, M., Jacobs. A., & Einstein, A. (2016). A very well-written article about a very important topic. *The Academic Journal of Relevant Topics,* 30(2), 321-341. doi:10.1234/1234_5678

Core sentence:
"This is the core sentence of the article because it represents the main thought of the paper." (p. 5)

Take-aways:
1) For media users, the thing they should remember is this.
2) However, for policy makers, this means that they should not forget this.

Critique (300 – 500 words):
First, a short description of the article's goal and method. Then, a shortcoming of the article. Explain why this shortcoming would be a problem and for whom it would be a problem. Provide a suggestion of how this shortcoming could have been avoided or improved.

Ethical Connection to Real-World (approximately 500 words):
Highlight an ethical dilemma, issue, or challenge that comes to mind when you read this article in the context of the real-world. Explain it. For example, you might reflect on how issues of privacy, autonomy, or digital rights feel threatened (or even supported). Be sure to reflect on this in a way that is not philosophical, but rather is connected to the real-world – considering <u>both</u> short and long-term goals.

Learning Goals & Submission Instructions

After completing this series (4) of assignments, you should be able to:
- Distinguish between main information and supplementary information when reading scientific literature;
- Demonstrate the ability to critically reflect on scientific literature;
- Demonstrate the ability to evaluate how scientific information can be applied in practice;
- Be able to reflect on the ethics associated with emerging technology; and
- Acknowledge limitations of emerging technology as well as reflect on future perspectives

Each submission is worth 15% of the grade, thus the ERR papers consist of 60% of your final grade. Each ERR is due prior to the A-sessions of week 3 through 6 and should be submitted on Canvas. To pass this class, each assignment must be graded with a 5.5 minimum. To be eligible for a resit, you are required to complete the original assignments on time. The resit will be organized within 6 weeks after the final class. For the resit, the highest possible grade is a 6.0.

Your submitted assignment should, in total, not exceed 2-A4 pages (1.5 spacing).

ERR Grading Rubric

ERR Grading Rubric				
Content				
	0 points	**1 point**	**2 points**	**POINTS**
Core sentence	No (clear) core sentence is provided.	A sentence is provided, but it does not (fully) cover the core of the article.	A sentence that covers the core of the article is provided.	___ 2 points
Take-away 1	No (clear) take-away is provided, or a take-away is provided but it is not in line with the discussion in the article.	A clear take-away is provided.	*Not applicable*	___ 1 point
Take-away 2	No (clear) take-away is provided, or a take-away is provided but it is not in line with the discussion in the article.	A clear take-away is provided.	*Not applicable*	___ 1 point
Critique	No (clear) critique is provided.	A critique is provided, but it is unclear or does not include a reasonable manner to address this shortcoming.	A clear critique is provided that includes a reasonable manner to address this shortcoming.	___ 2 points
Ethical Connection	No ethical connection is discussed; or connection between article AND implication missing.	An ethical connection is discussed, but it is not clear how it relates to the article or misses a foci on either short or long-term implications.	A clear ethical connection is provided that connects to the article and is relevant to the real-world by including short and long-term implications.	___ 2 points
Formatting and writing				
	0 points	**½ point**	**1 point**	**POINTS**
Writing	Writing contains several errors and/or unclarities or significantly violates word count recommendations.	Overall writing is clear, but the text contains some writing errors throughout.	Overall writing is clear and free from errors.	___ 1 point
Other	1 point at instructor discretion			___ 1 point
			ERR Assignment Grade:	___ 10 points

Assignment 2: Ethical Reflection (1 submission, 20% of final grade)

Deadline: Monday, Week 7 by 17:00u on CANVAS

As emerging technologies find their way into modern society, ethical controversies often abound. Most often, these controversies emerge amidst questions of effects: how will these emerging technologies affect society? How do we ensure that these technologies are beneficial, responsible, and sustainable? How do we ensure that technologies are consistent with our ethical and moral guidelines that we use to give us direction? These debates happen at every level: from the early stages of development, to the decisions associated with access, to the potential effects of these technologies. In this class, as we reflect on emerging technologies in contemporary society, it is important to be mindful of these ethical debates. Questions might include:

1. How does technology inherit values in the design progress? Can we, or should we, be embedding values and norms during design?
2. What conditions are necessary for ensuring responsible design? What is responsible design?
3. What role does human rights play in ensuring ethical and fair access and use? How does the European Convention on Human Rights intersect with technology?
4. How does technology influence society? What are the ethical and moral challenges associated with this influence?
5. Is there such a thing as an "ethical analysis"? What might it look like in the space of emerging technology?

These questions, however, are not exclusive nor are their clear, definitive answers. There are numerous ways that ethics intersects with emerging technology in important ways. In this reflection paper, your assignment is to reflect on how ethics intersects with technology. Specifically, for this assignment, you need to do the following:

1. **Find Inspiration in a Film**. Identify and watch any film of your choosing (fiction; non-fiction) that is focused on technology. You might watch a "vintage" film such as "Bicentennial man", "The Matrix" or "Minority Report" or a slightly more modern take such as "I, Robot", "The Circle", "Transcendence", "Her", "Ad Astra", "Anon", 'Black Mirror: Bandersnatch", "Robot & Frank", "Onisciente" or "Tau". The film should focus on emerging technology in a central way.
2. **Identify Your Question.** Throughout the class, you will see that issues of ethics are touched upon in different ways – ranging from ethics in the design process to human rights to ethical questions of effects. What question emerges for you after watching this movie? This can (and likely will be) a broad question.
3. **Engage with Your Question.** In a thoughtful manner, engage with the question you have identified (the list of questions above might serve as inspiration for you). You are not required to find external literature to support your argument, although some external support may be useful to you. Be thoughtful in your writing, strong in your conviction, clear in your argumentation, and succinct in your prose.

Ethical Reflection Formatting Sample

Name: Example Student
Student number: 12345678
Date: 04-02-2020

Film Selection & Key Question (maximum 250 words)
The film "Emerging Technology is the Best Class Ever" was produced in 2020 by Drs. Piotrowski & Barco. The film focuses on the many different ways that emerging technology is intersecting with society and the roles we play, as designers and users, in creating responsible technology that aids our social experience in healthy and meaningful ways. The film features two engaging professors who, together, challenge young scholars to think about emerging technology from a host of different perspectives, including ethical ones. While watching this film, one question consistently emerged for me, namely: <u>"Why does this reflection paper seem so easy at first, but really is quite complicated?</u>

Reflection (maximum 750 words)
In a thoughtful manner, engage with the question you have identified (remember: the list of questions above might serve as inspiration for you and is a recommending starting point – although you may choose another if you would like). You are not required to find external literature to support your argument, although some <u>external support may be useful</u> to you and will likely strengthen your argumentation and thus improve your overall reflection. By the end of your reflection, the reader should have a sense that you have <u>considered ethics from one or more perspectives</u> (design, access, use, etc.) and have <u>a clear opinion on the state of the field and where we should head in the future</u>. If you use references, these should be included in a reference list. Be thoughtful in your writing, strong in your conviction, clear in your argumentation, and succinct in your prose.

Your submitted assignment should, in total, not exceed 3-A4 pages (1.5 spacing; reference list excluded in page count).

Learning Goals & Submission Instructions

After completing this assignment, you should be able to:
- Demonstrate your ability to reflect critically on the role of ethics in emerging technology.
- Able to articulately and knowledgeably discuss the topic of ethics in design in the in-class Socratic Seminar

This submission is worth 20% of your final grade. It should be submitted on CANVAS. To pass this class, this assignment must be graded with a 5.5 minimum. To be eligible for a resit, you are required to complete the original assignments on time. The resit will be organized within 6 weeks after the final class. For the resit, the highest possible grade is a 6.0.

Ethical Reflection Grading Rubric

ERR Grading Rubric				
Content				
	0 points	**1 point**	**2 points**	**POINTS**
Film Selection	No description of film is provided	Sufficient description of film is provided to give context to the posed question.	*Not applicable*	1 point
Guiding Question	No guiding question is provided.	A strong guiding question is provided.	*Not applicable*	1 point
Reflection: Foci	No (clear) foci is provided.	The reflection focuses on one or more areas of ethics (design; access; use; other relevant) but this could be sharper.	The reflection clearly focuses on one or more areas of ethics (design; access; use; other relevant).	2 points
Reflection: Opinion	No (clear) opinion is provided.	An opinion is provided, but it is difficult to follow or otherwise unclear (e.g., connection to question vague).	A clear opinion that connects to the posited question is offered.	2 points
Reflection: Strength of Argumentation	Argumentation is weak and/or unrelated to the guiding question.	Argumentation is generally sufficient for guiding question but lacks the necessary "je ne sais quoi" to fully convince the reader.	Argumentation is strong, persuasive, and clearly connected to the guiding question	2 points
Formatting and writing				
	0 points	**½ point**	**1 point**	**POINTS**
Formatting & Writing	Writing contains several errors and/or unclarities or significantly violates word count recommendations.	Overall writing is clear, but the text contains some writing errors throughout or minor errors in formatting have been made.	Overall writing is clear and free from errors and conforms to all formatting requirements.	1 point
Other	1 point at instructor discretion			1 point
Ethical Reflection Assignment Grade:				10 points

Assignment 3: Pitch & Design Brief (20% of final grade; group assignment)

Deadline: Thursday, Week 7 by 13:00u on CANVAS

A Design brief is a document for a design project that outlines the deliverables and scope of the project including any products or works, timing, and budget. It is prepared as part of the early stages of any design project, and typically is included as part of a client 'pitch'. In the article, *Creating the perfect design brief how to manage design for strategic advantage,* Phillips (2004) consider the design brief as supporting the comprehensive understanding of the problem that needs to be solved. With this in mind, he argues that a design brief should consist of a thorough presentation of the problem, together with the expected outcomes of design and answer key questions associated with the project design.

For this class, you and you group are expected to present a design idea that presents emerging technology (i.e., social robot; virtual agent; chatbot) as a means to solve a specific problem for a specific audience. Your problem will focus on one of the two potential areas: <u>sustainability or well-being</u>. Your proposed design will be formally presented in a <u>Concept Pitch</u> on the last day of class alongside a written <u>Design Brief</u>. This is a group project for which one grade will be assigned to all group members. Details about both the Design Brief and Concept Pitch follow.

The Design Brief
Your design brief should be aesthetically attractive. It is the document you leave with the company for review after your pitch. It should reflect your group's personality and style, while comprehensively and succinctly highlighting your proposed ideas. A complete design brief will address the following information:

A. **Project Overview**
   a. <u>Background</u>
      i. What is the aim of the project?
      ii. Why are you doing this project now? [*problem statement*]
      iii. What specific outcomes are to be expected from this project? [*immediate outcomes; long-term outcomes*]
      iv. Who are the key stakeholders in this project?
   b. <u>Project Team</u>
      i. Team Name
      ii. Project team members names and roles
B. **Target Audience Review**
   a. Who are you designing for? [*this involves a very precise and complete description of the target audience*]
C. **Category Review**
   a. What category(ies) is this product in?
   b. <u>The Competition</u>: What is the competition for this product?
   c. <u>The Trends</u>: What are the current trends category/industry trends?
   d. <u>Pricing and Promotion</u>: What is your anticipated pricing and promotion strategy? [*for this assignment, take inspiration from the market*]
D. **Project Design Concept, Sample**
   a. Provide a sample design concept
      i. A strong design concept relies on user-centered design principles, clearly connects to the project aim, and <u>shows the causal chain from</u>

theory to concept decisions to ensure decisions are scientifically-supported.

    ii. With emerging technology such as social robots, chatbots, and virtual agents, one of the key aspects of the technology is the INTERACTION between user and technology. The sample should provide some indication of what this interaction will look like.

E. Anticipated Project Timeline

    a. What, precisely, are the phases of this design project? How much time must be devoted to each phase? What is the expected completion date? *Note: With some exception, most projects should generally include the final phases:*

        i. Phase 1: Design Concept Development (Iterative)

        ii. Phase 2: Alpha-Testing Design Concepts with Users

        iii. Phase 3: Short-list Design Concepts

        iv. Phase 4: Iterative Re-Design and Beta-Test Concepts with Target Audience

        v. Phase 5: Final Approval of Concept; Develop, Test, and Present

            1. Who will approve the final design solution?

            2. What criteria will be used for this approval?

        vi. Phase 6: Implementation

            1. How will the design solution be implemented?

        vii. Phase 7: Implementation Assessment [Measurement Metrics]

            1. How will the results be measured?

For your design brief, you can take some liberties with Section C and Section E but these should be included for completeness. A focus will be placed on your ability to present a clear understanding of the problem, the target audience for whom the problem occurs, your design solution for this audience, and a clear demonstration of the theory or theories that are the underpinning of your work (scientifically-support design).

Concept Pitch

Your concept pitch should be aesthetically attractive, easy to follow, and engaging. It should reflect your group's personality and style (consistent with the design brief), while comprehensively and succinctly highlighting your proposed idea. It should ultimately bring your design brief to life. The successful pitch, for which teams have a maximum of 10-minutes, will:

- Provide background, the key challenge, and the goals of the product.
- Highlight the key members of the design concept team and their roles.
- Provide a richly detailed user profile for the typical user (remember UCD!).
- Reveal how the proposed project meets audience needs [Audience Gratification] and addresses the key challenge. Importantly, this includes showing how the causal chain from theory to concept decisions are scientifically-supported – and doing so in a manner that is accessible to a non-technical audience as well.
- Provides context of the product by highlighting competitors and how this will be situated in the larger market.
- Provide a creative low-fidelity sample to help your audience envision what the product will look like and what the product experience will be. You might choose to use a free program like InVisionApp or Sketchboard (https://sketchboard.me/home) to assist you. Your lo-fi sample should provide some indicators of the intended communication (e.g., via stories or potential dialogues).
- Highlight the expected route from sample to final product.
- Evidence passion, energy, and creativity [void of academic jargon].

Learning Goals & Submission Instructions

After completing this assignment, you should be able to:
- Articulate the process of technology design and the numerous stakeholders that can (and should) be involved in the process
- Apply communication theory to the design of emerging technology (theory-driven decisions)
- Convey academic ideas in an accessible manner that is interpretable for a larger audience

This assignment (graded as a whole: brief and pitch) is worth 20% of the final course grade. Not all group members must present during the pitch, but all members will receive the same grade. To pass this class, this assignment should be graded with a 5.5 minimum. Students have one opportunity to resit, via an alternative assignment, for which the highest possible grade is a 6.0. To be eligible for a resit, you are required to complete the original assignments on time. The resit will be organized within 6 weeks after the final class.

Pitch & Design Brief Rubric

Design Brief Content

	0 points	1 point	2 points	POINTS
Project Overview	Group provides little to no background for the project.	Group presents sufficient background to understand the key aims of the project.	*Not Applicable*	_____
User Profile	Group presents little to no description about the user.	Group presents a thorough understanding of the 'typical' user and his/her need as relevant to this project.	*Not Applicable*	_____
Connecting User to Project	Group presents little to no description as to how this project will fulfill user needs.	Group presents a thorough description of the goals of the product and how this aligns with user needs.	*Not Applicable*	_____
Project Context	Group projects little to no context for the project in terms of competitors or timeline.	Group provides reasonable overview of competitors and reasonable timeline.	*Not Applicable*	_____
Design Concept (Low-Fidelity) Sample	Group presents a concept that does not connect well to project aim and requirements improvement in both of UCD and communication theory.	Group presents a reasonable design concept that connects to aim, but its reliance on UCD principles or communication theory could be improved.	Group presents a a strong design concept that relies on user-centered design principles, clearly connects to the project aim, and shows the causal chain from theory to concept decisions	_____
Design Concept Creativity	The design concept shows little to no creativity.	The design concept shows creativity.	*Not Applicable*	_____

Prototype Pitch

	0 points	1 point	2 points	POINTS
Appropriateness for Professional Audience	The group did not offer a presentation appropriate for a professional audience	The group did attempt to deliver an engaging presentation that was free of jargon and appropriate for a professional audience, but there is room for improvement.	The group conducted an engaging presentation that was free of jargon and appropriate for a professional audience.	2 points
Other	1 point at instructor discretion.			1 point
			Total Prototype Pitch Grade	10 points

COURSE MEETINGS

Week 1

> *Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.*
>
> *Stephen Hawking*

Week 1a: INTRODUCTION TO THE COURSE
Readings
1. No readings assigned.

Deadlines
1. Students should review all content on CANVAS.

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Week 1b: ETHICAL TECHNOLOGY?
Readings
1. Brey, P. A. (2017). Ethics of Emerging Technologies. In *The Ethics of Technology: Methods and Approaches* (pp. 175–192). Rowman & Littlefield International.
2. Malle, B. F. (2016). Integrating robot ethics and machine morality: The study and design of moral competence in robots. *Ethics and Information Technology*, *18*(4), 243–256. https://doi.org/10/ggh6ht
3. Araujo, T., Helberger, N., Kruikemeier, S., & de Vreese, C. H. (2020). In AI we trust? Perceptions about automated decision-making by artificial intelligence. *AI & SOCIETY*. https://doi.org/10/ggjs57
4. Ischen, C., Araujo, T., Voorveld, H., van Noort, G., & Smit, E. (2020). Privacy Concerns in Chatbot Interactions. In A. Følstad, T. Araujo, S. Papadopoulos, E. L.-C. Law, O.-C. Granmo, E. Luger, & P. B. Brandtzaeg (Eds.), *Chatbot Research and Design* (Vol. 11970, pp. 34–48). Springer International Publishing. https://doi.org/10.1007/978-3-030-39540-7_3
5. Möller, J., Trilling, D., Helberger, N., & van Es, B. (2018). Do not blame it on the algorithm: An empirical assessment of multiple recommender systems and their impact on content diversity. *Information, Communication & Society*, *21*(7), 959–977. https://doi.org/10/gdqc32

Deadlines
1. Complete Assigned Reading
2. Determine group preferences, complete survey [provided via email]

Week 2

> *User-centered design means working with your users all throughout the project.*
>
> *Donald Norman*

Week 2a: THEORETICAL PERSPECTIVES
Readings
1. Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319. https://doi.org/10/cc6
2. Sundar, S. S., & Limperos, A. M. (2013). Uses and Grats 2.0: New Gratifications for New Media. *Journal of Broadcasting & Electronic Media*, *57*(4), 504–525. https://doi.org/10/ggh74r
3. Valkenburg, P. M. (2017). Understanding Self-Effects in Social Media: Self-Effects in Social Media. *Human Communication Research*, *43*(4), 477–490. https://doi.org/10/gcmcjm
4. Sundar, S. S. (2020). Rise of Machine Agency: A Framework for Studying the Psychology of Human–AI Interaction (HAII). *Journal of Computer-Mediated Communication*, zmz026. https://doi.org/10/ggjvvq
5. Guzman, A. L., & Lewis, S. C. (2020). Artificial intelligence and communication: A Human–Machine Communication research agenda. *New Media & Society*, *22*(1), 70–86. https://doi.org/10/gf5hrb

Deadlines
1. Complete ALL Assigned Readings [No ERR this week]

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Week 2b: USER-CENTERED DESIGN
Readings
1. Norman, D. (2013). The design of everyday things: Revised and expanded edition. Basic Books (AZ). Chapter 1.
2. Dell'Era, C., & Landoni, P. (2014). Living Lab: A Methodology between User-Centred Design and Participatory Design: Living Lab. *Creativity and Innovation Management*, *23*(2), 137–154. https://doi.org/10/gdz24c
3. *Inclusive Design Research Centre*. (n.d.). Retrieved February 1, 2020, from https://idrc.ocadu.ca/index.php/resources/idrc-online/library-of-papers/443-whatisinclusivedesign
4. *User-centered design: Definition, examples, and tips | Inside Design Blog*. (n.d.). Retrieved February 1, 2020, from https://www.invisionapp.com/inside-design/user-centered-design-definition-examples-and-tips/
5. *5 essentials for your user persona template (with examples) | Inside Design Blog*. (n.d.). Retrieved February 1, 2020, from https://www.invisionapp.com/inside-design/user-persona-template/

Deadlines
1. Complete ALL Assigned Readings [No ERR this week]

Week 3

> *With regard to robots, in the early days of robots people said, 'Oh, let's build a robot' and what's the first thought? You make a robot look like a human and do human things. That's so 1950s. We are so past that.*
>
> *Neil deGrasse Tyson*

Week 3a: SOCIAL ROBOTS
Readings
1. Zhao, S. (2006). Humanoid social robots as a medium of communication. *New Media & Society*, *8*(3), 401–419. https://doi.org/10/ckg9zz
2. Thrun, S. (n.d.). *Toward a Framework for Human–Robot Interaction*. 17. https://doi.org/10/dvng3b
3. Broadbent, E. (2017). Interactions With Robots: The Truths We Reveal About Ourselves. *Annual Review of Psychology*, *68*(1), 627–652. https://doi.org/10/gd4qq6
4. Jong, C. de, Kuhne, R., Peter, J., Straten, C. L. V., & Barco, A. (2019). What Do Children Want from a Social Robot? Toward Gratifications Measures for Child-Robot Interaction*. *2019 28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, 1–8. https://doi.org/10/ggjvv5
5. Bowman, N. D., & Banks, J. (2019). Social and Entertainment Gratifications of Videogame Play Comparing Robot, AI, and Human Partners. *2019 28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, 1–6. https://doi.org/10/ggjv3q

Deadlines
1. Complete Assigned Reading
2. Submit Assigned ERR on Canvas

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Week 3b: SOCIAL ROBOTS: SKILLS WORKSHOP
Readings
1. None assigned

Deadlines
1. None

Week 4

> *Things like chatbots, machine learning tools, natural language processing, or sentiment analysis are applications of artificial intelligence that may one day profoundly change how we think about and transact in travel and local experiences.*
>
> *Gillian Tans*

Week 4a: CHATBOTS
Readings
1. Araujo, T. (2018). Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. *Computers in Human Behavior*, *85*, 183–189. https://doi.org/10/gf2k3t
2. Go, E., & Sundar, S. S. (2019). Humanizing chatbots: The effects of visual, identity and conversational cues on humanness perceptions. *Computers in Human Behavior*, *97*, 304–316. https://doi.org/10/gf45xr
3. Chaves, A. P., & Gerosa, M. A. (2019). How should my chatbot interact? A survey on human-chatbot interaction design. *ArXiv:1904.02743 [Cs]*. http://arxiv.org/abs/1904.02743
4. Ho, A., Hancock, J., & Miner, A. S. (2018). Psychological, Relational, and Emotional Effects of Self-Disclosure After Conversations With a Chatbot. *Journal of Communication*, *68*(4), 712–733. https://doi.org/10/gd3m74
5. Van den Broeck, E., Zarouali, B., & Poels, K. (2019). Chatbot advertising effectiveness: When does the message get through? *Computers in Human Behavior*, *98*, 150–157. https://doi.org/10/ggjv4f

Deadlines
1. Complete Assigned Reading
2. Submit Assigned ERR on Canvas

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Week 4b: CHATBOTS: SKILLS WORKSHOP
Readings
1. Optional: Araujo, T. (2019). *Conversational Agent Research Toolkit: An alternative for creating and managing chatbots for experimental research* [Preprint]. SocArXiv. https://doi.org/10.31235/osf.io/9ukyf

Deadlines
1. Complete Assigned Reading

Week 5

> *"AI can be our friend."*
>
> *Bill Gates*

Week 5a: VIRTUAL AGENTS
Readings
1. Feine, J., Gnewuch, U., Morana, S., & Maedche, A. (2019). A Taxonomy of Social Cues for Conversational Agents. *International Journal of Human-Computer Studies*, *132*, 138–161. https://doi.org/10/ggdtg5
2. Hoy, M. B. (2018). Alexa, Siri, Cortana, and More: An Introduction to Voice Assistants. *Medical Reference Services Quarterly*, *37*(1), 81–88. https://doi.org/10/ggd7g3
3. McLean, G., & Osei-Frimpong, K. (2019). Hey Alexa … examine the variables influencing the use of artificial intelligent in-home voice assistants. *Computers in Human Behavior*, *99*, 28–37. https://doi.org/10/gf4jwg
4. Ammari, T., Kaye, J., Tsai, J. Y., & Bentley, F. (2019). Music, Search, and IoT: How People (Really) Use Voice Assistants. *ACM Transactions on Computer-Human Interaction*, *26*(3), 1–28. https://doi.org/10/ggjv4x
5. Silvia, L., & Anne Marie, P. (2019). Young Children and Voice Search: What We Know From Human-Computer Interaction Research. *Frontiers in Psychology*, *10*(8), 1–5. https://doi.org/10/ggjv42

Deadlines
1. Complete Assigned Reading
2. Submit Assigned ERR on Canvas

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Week 5b: VIRTUAL AGENTS: SKILLS WORKSHOP
Readings
1. None

Deadlines
2. None

Week 6

> *You have to teach your algorithm what it can do and what it cannot do because, otherwise, there is a risk that the algorithms will learn the tricks of the old cartels.*
>
> *Margrethe Vestager*

Week 6a: RECOMMENDATION ENGINES
Readings

1. Jugovac, M., & Jannach, D. (2017). Interacting with Recommenders—Overview and Research Directions. *ACM Transactions on Interactive Intelligent Systems*, 7(3), 1–46. https://doi.org/10/ggjv8q
2. Helberger, N., Karppinen, K., & D'Acunto, L. (2018). Exposure diversity as a design principle for recommender systems. *Information, Communication & Society*, 21(2), 191–207. https://doi.org/10/gfkn39
3. Möller, J., Trilling, D., Helberger, N., & van Es, B. (2018). Do not blame it on the algorithm: An empirical assessment of multiple recommender systems and their impact on content diversity. *Information, Communication & Society*, 21(7), 959–977. https://doi.org/10/gdqc32
4. Thurman, N., Moeller, J., Helberger, N., & Trilling, D. (2019). My Friends, Editors, Algorithms, and I: Examining audience attitudes to news selection. *Digital Journalism*, 7(4), 447–469. https://doi.org/10/gf7dn8
5. Arthurs, J., Drakopoulou, S., & Gandini, A. (2018). Researching YouTube. *Convergence: The International Journal of Research into New Media Technologies*, 24(1), 3–15. https://doi.org/10/gfzb8w

Deadlines
1. Complete Assigned Readings
2. Submit Assigned ERR on Canvas

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Week 6b: FINAL PROJECT GROUP-WORK AND FEEDBACK
Readings
1. No reading assigned – work on group project.

Deadlines
1. Prepare for in-class group work

Week 7

> *The ultimate goal of technology, the telos of techne, is to replace a natural world that's indifferent to our wishes--a world of hurricanes and hardships and breakable hearts; a world of resistance--with a world so responsive to our wishes as to be, effectively, a mere extension of the self.*
>
> *JONATHAN FRANZEN, Farther Away: Essays*

Week 7a: FUTURE TRENDS SOCRATIC SEMINAR

Readings
1. No readings assigned – Week 1b readings will be useful for assignment

Deadlines
1. Submit Ethical Reflections on CANVAS

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Week 7b: GROUP PRESENTATIONS

Readings
1. None

Deadlines
1. In-Class Group Presentation; Submit Design Brief On CANVAS